INSTRUCTION MANUAL

PC-141 & PC-142

KAY ELECTRIC CO.
PINE BROOK, N. J.

We would like to maintain contact with the people who use or fix our instruments. Would you please complete the following and return to us–

PC-141
+
PC-142

Your Name.....

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Do you use this instrument? ..... ☐

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.....

.....

Send extra manual on Model.....

Send general data..... ☐

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SECTION I

GENERAL INFORMATION

1.1 INTRODUCTION

The Model PC-141B and PC-142B Sweep Generator Plug-In Unit are compatible with Kay Electric Company Marka-Sweep 1500 and Vari-Sweep 860 Basic Rack Units. The PC-141B and PC142B Heads are beat-frequency oscillators which provide a center frequency from zero to 200 KC and zero to 600 KC respectively.

Switchable sweep width ranges are available providing optimum stability at the desired sweep at all repetition rates. RF output is adjustable to 1 volt RMS output into 50 ohms. A separate marker RF OUT provides a means of coupling a portion of the swept RF to drive a marker generator. All power and driving signals are provided by the basic rack unit.

1.2 INSTALLATION

As soon as the Plug-in is received, it should be visually inspected to determine that it was not damaged during shipment. Any damage should be reported immediately to the carrier and to Kay Electric Company.

To install this unit in the basic rack, slide it into the receiving well as far as possible; then, turn the locking screw clockwise until it is tight. The power switch on the basic rack should be in the off position when installing or interchanging plug-ins so that transients will not damage the semiconductors.

1.3 SPECIFICATIONS

	PC-141B	PC-142B
FREQUENCY RANGE	20 cps to 200KC	35 cps to 600KC
SWEEP WIDTH	20KC at low end 8KC at high end	50KC at low end 20KC at high end
OUTPUT	1.0 volt RMS into 50 or 70 ohms.	1.0 volt RMS into 50 or 70 ohms
FLATNESS	±0.5DB over the entire range	±0.5DB over the entire range
DIMENSIONS	6" H x 7½" W x 9" D	6" H x 7½" W x 9"D
WEIGHT	6 lbs.	6 lbs.

SECTION II

OPERATING INSTRUCTION

2.1 INTRODUCTION

General operating instructions are given in the manual provided with the basic rack units compatible with the Sweep Plug-in. Only functions influenced by the Sweep Head are discussed in this manual.

2.2 OPERATING CONTROLS & TERMINALS

CONTROL	POSITION	FUNCTION
FREQUENCY KILOCYCLES	Variable	Set the Center Frequency to any frequency within the range of 0-200KC (0-600KC-142A)
CENTERING	Variable	Provides a Zero Adj. for the output frequency when the SWEEP WIDTH switch is set to the NARROW position.
FINE FREQ. ADJ.	Variable	A vernier control which may provide a small variation in output frequency
SWEEP WIDTH	Narrow-Wide	Used in conjunction with the SWEEP WIDTH control on the basic rack unit. This switch provides a variable sweep width.
LIN-LOG SWITCH	Lin-Log	Depending on the position of this switch, either linear or logarithmic sweeps will be generated.
MARKER RF OUTPUT TERMINAL		A portion of the swept RF is available here and is normally patched inthe MARKER RF IN jack on the Marker Plug-in Unit.
RF LEVEL	Variable	Adjust the RF output of the unit.

2.3 GENERAL OPERATION

The Sweep Head should be installed in the rack unit and connected as shown in Fig. 2.1, or as described in the manual furnished with the basic rack. If an external detector is used, it is important that it has a flat response over the passband on the circuit under test.

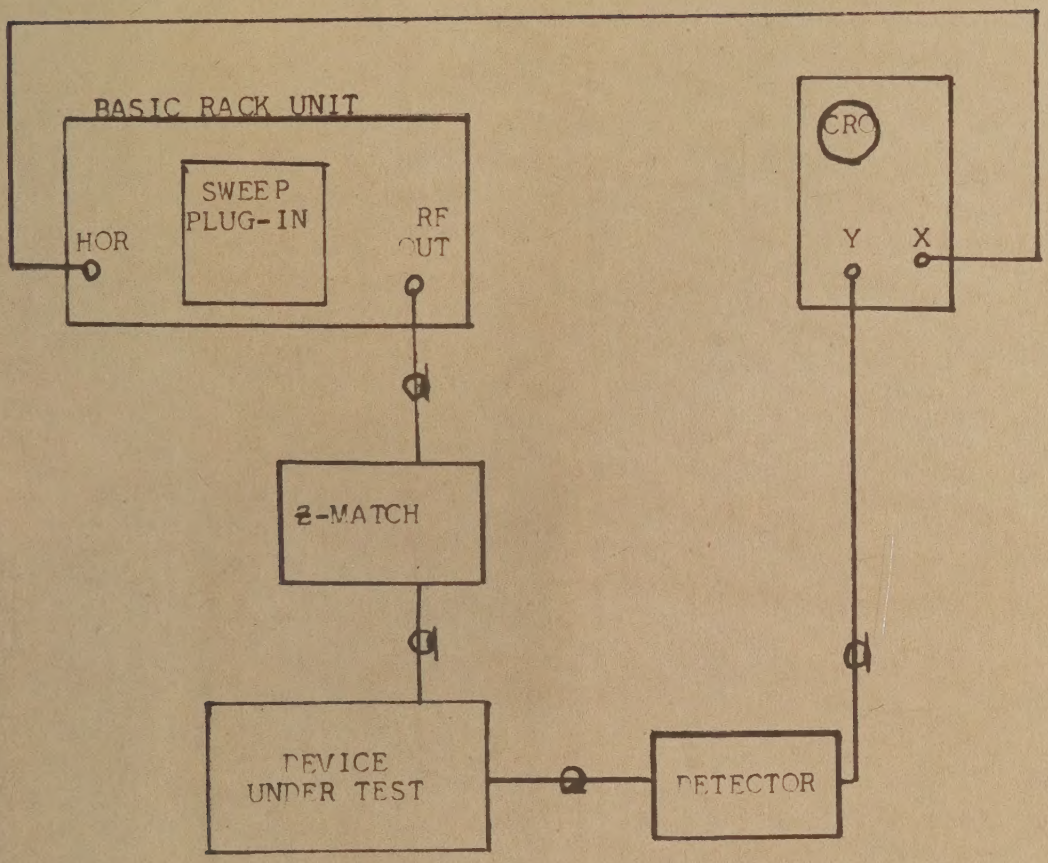

FIGURE 2.1

1. Set the FREQUENCY KILOSCYCLES control to the Center Frequency of the device under test.

2. Set the LOG-LIN switch for desired sweep mode.

3. Set the SWEEP SELECTOR (on rack unit), for the desired mode of operation: LINE LOCK VAR or MAN SWP.

4. Set the SWEEP WIDTH switch on the Plug-in and the SWEEP WIDTH control (on the rack unit), for the desired sweep width. (A sweep width of 2 to 3 times the bandpass of the device under test is usually most convenient).

5. Adjust the RF LEVEL control and the RF ATTENUATOR, (on the rack unit), for a convenient output amplitude.

6. The CENTERING and FINE FREQUENCY ADJUST controls may be utilized to provide accurate dial calibration or as vernier controls for small output frequency variations.

SWEEP OSC 1.2 - 1.4 MC

SWEEP BUFFER AMPL

CW BUFFER

RF LEVEL (EXT)

XTAL OSCILLATOR 1.400 MC

LOG

LIN

METER ADJ (INT)

BIAS ADJ (INT)

LIN ADJ "A" (INT)

LIN ADJ "B" (INT)

FINE FREQ ADJ (EXT)

SAW TOOTH LEVEL ADJ (INT)

SWEEP WIDTH

WIDE

NARROW

BLANKING AMP Q11 2N2270

OUTPUT AMPL

EMITTER FOLLOWER

RF OUTPUT (INT)

MARKER RF OUTPUT (INT)

AUX. RF OUTPUT (EXT)

NOTE
UNLESS INDICATED OTHERWISE
ALL CAPACITANCES ARE IN μμf
ALL RESISTANCES ARE IN OHMS 1/2W
* FACTORY SELECTED

PLUG IN UNIT
USE WITH
MARKA-SWEEP 1500C
VARI-SWEEP 860H

SCHEMATIC PC141B

MAT. FINISH: SCALE:

DIMENSION TOLERANCES UNLESS OTHERWISE SPECIFIED.
DECIMAL DIMENSIONS ± .005 FRACTIONAL DIMENSIONS ± 1/64

CHANGE	DATE	APP.
EB: Q10 WAS D7 R67 47 K WAS 33 K PER SUPCKT 1332	10/20/67	HT
"C" REVISE INTMER CIRCUIT PER ECN# 1332	10/26/67	HT

KAY ELECTRIC CO.
PINE BROOK, N. J.

DWN. BY M. Lewis DATE 10/20/67
APP. BY H. T. DATE 12/11/67

DWG. NO. D10255C

SWEEP OSC 1.6-2.2 MC

SWEEP BUFFER AMPL

CW BUFFER

XTAL OSCILLATOR 2.2 MC

OUTPUT AMPL

EMITTER FOLLOWER

Q11 2N2270 BLANKING AMP.

NOTE: UNLESS INDICATED OTHERWISE
ALL CAPACITANCES ARE IN μf
ALL RESISTANCES ARE IN OHMS 1/2 WATT
* FACTORY SELECTED

PLUG IN USED WITH:
MARK A-SWEEP 1500C
VARI-SWEEP 860H

SCHEMATIC	PC142B
MAT.	FINISH:
SCALE:	
DIMENSION TOLERANCES UNLESS OTHERWISE SPECIFIED. DECIMAL DIMENSIONS ± .005 FRACTIONAL DIMENSIONS ± 1/64	KAY ELECTRIC CO. PINE BROOK, N. J.
CHANGE - DATE APP.	
"B" Q11 WAS Q7 R67 47K WAS 33K REVISE SCHCKT 12-6-67 MC	
"C" REVISE INT MARKER CIRCUIT PER ECN# 1838 2-21-68 MT	
DWN. BY M. Jones DATE 11-8-67	
APP. BY [illegible] DATE 12-11-67	
DWG. NO. D10256C	

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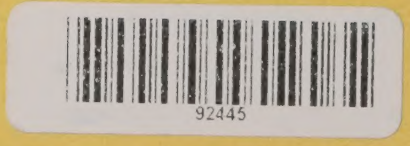
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